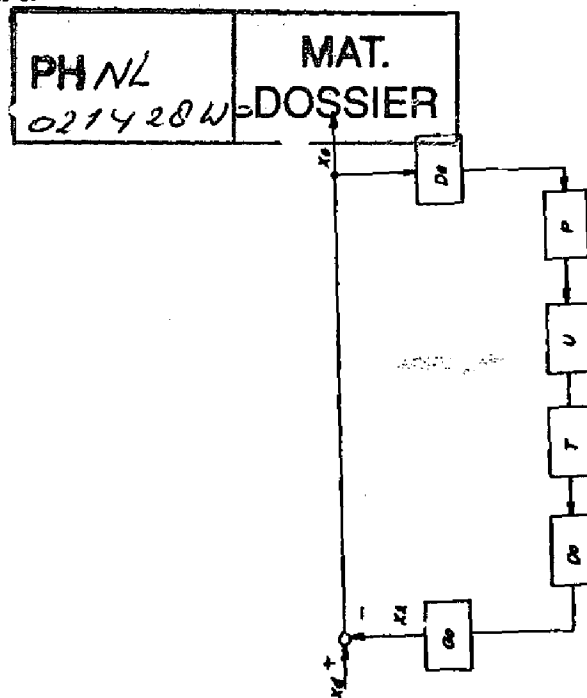


## Patent Abstracts of Japan

TITLE : CONTROL DEVICE OF LIGHT  
CONVERGING LOCATION



**ABSTRACT :** PURPOSE: To stabilize the control of the titled device, by supplying a driving current to the driving circuit of an actuator through a damping correcting circuit whose transfer function T is expressed by a formula  

$$T = (s^2 + 2\xi_0\omega_0s + \omega_0^2) / (s^2 + s\xi_1\omega_1s + \omega_0^2)$$
 (where,  $\xi_1$  is damping number).

CONSTITUTION: A light converging location controlling device supplies a driving current, on which phase delay compensation and damping correction are performed by passing a target displacing signal through a phase delay compensating circuit whose transfer function is  $U=(s+\omega_2)/(s+\omega_1)$ ,  $s: j\omega$ ,  $\omega_1, \omega_2$ : two bent point frequencies ( $\omega_1 < \omega_2$ ) and a damping correcting circuit whose transfer function is  $T=(s^2+2\xi_0\omega_0s+\omega_0^2)/(s^2+2\xi_1\omega_1s+\omega_0^2)$  (where,  $\xi_1$  is damping number), when the resonance frequency and damping number of an actuator for focus control and radial control are  $\omega_0$  and  $\xi_0$  ( $\xi_0 < 1$ ), respectively. Therefore, the control can be stabilized, by setting the resonance frequencies of the phase delay compensating circuit  $U$  and damping correcting circuit a little lower than the resonance frequency  $\omega_0$  of the actuator by taking the fluctuation of the frequency  $\omega_0$  into consideration, when the phase delay compensating circuit  $U$  and damping correcting circuit are designed.

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